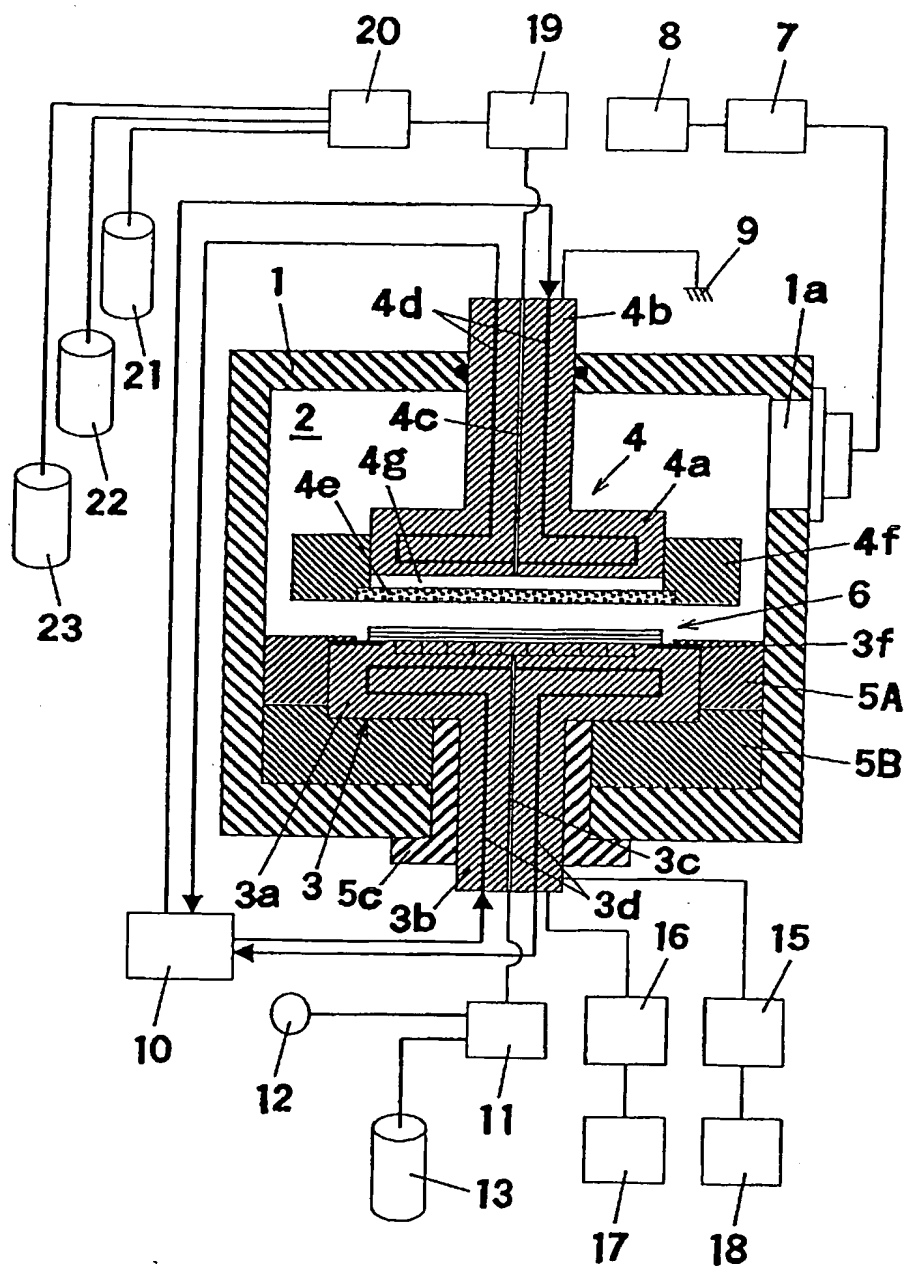


【書類名】 図面

【図1】

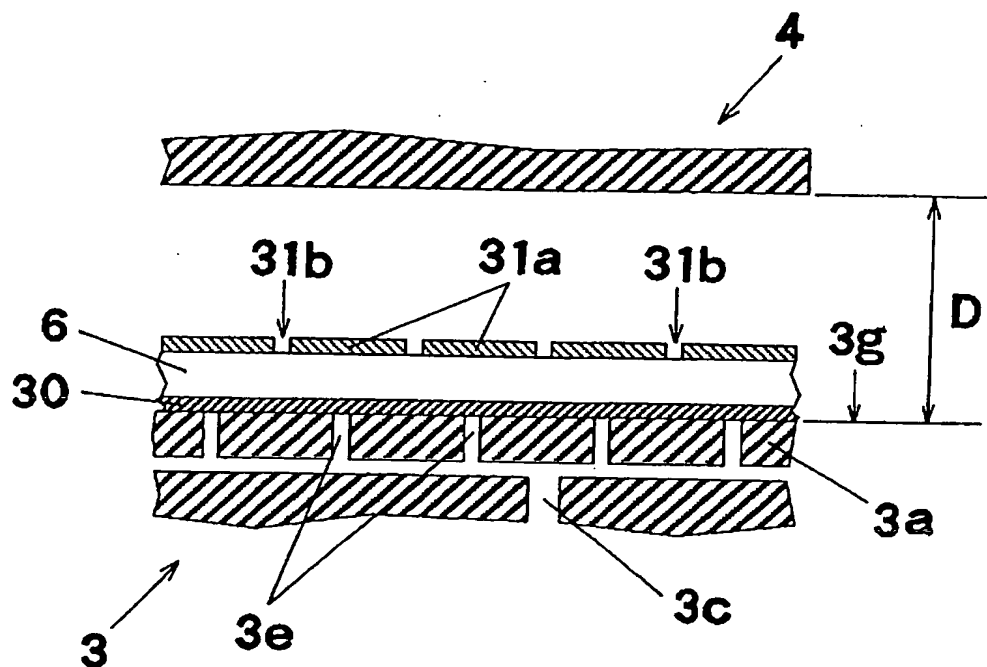
Fig. 1



- | | | |
|----------|------------|--------------------|
| 1 真空チャンバ | 6 半導体ウェハ | 18 静電吸着用D-C電源部 |
| 2 処理室 | 8 真空ポンプ | 21 第1のプラズマ発生用ガス供給部 |
| 3 下部電極 | 12 真空吸着ポンプ | 22 第2のプラズマ発生用ガス供給部 |
| 4 上部電極 | 17 高周波電源部 | 23 第3のプラズマ発生用ガス供給部 |

【図2】

Fig. 2



- 3 g 保持面
- 3 0 保護シート
- 3 1 a レジスト膜
- 3 1 b 切断線

【図3】

Fig. 3(a)

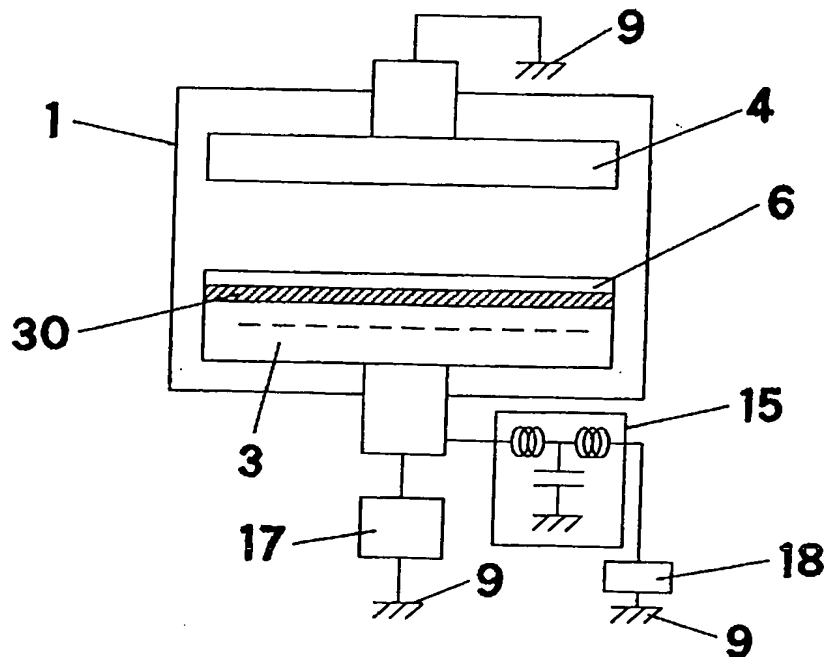
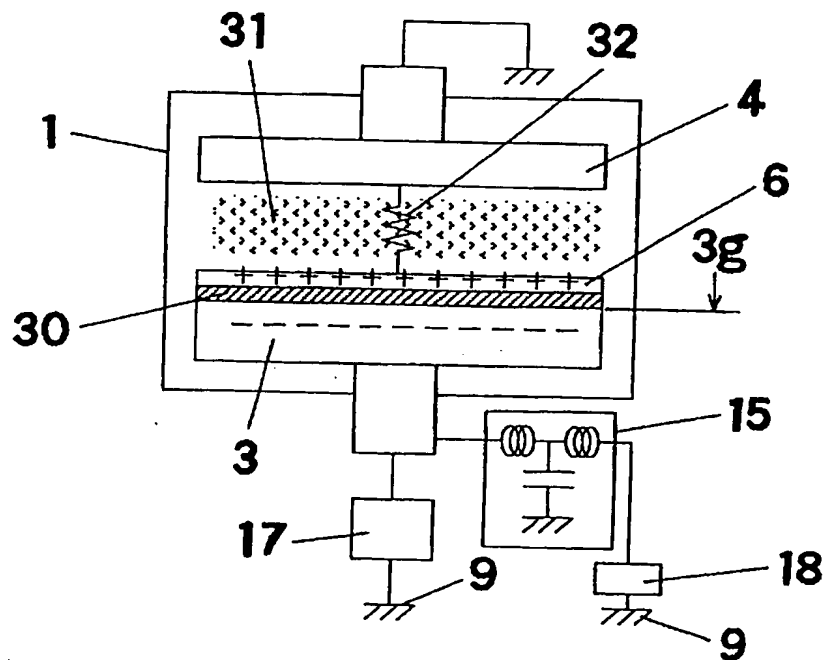
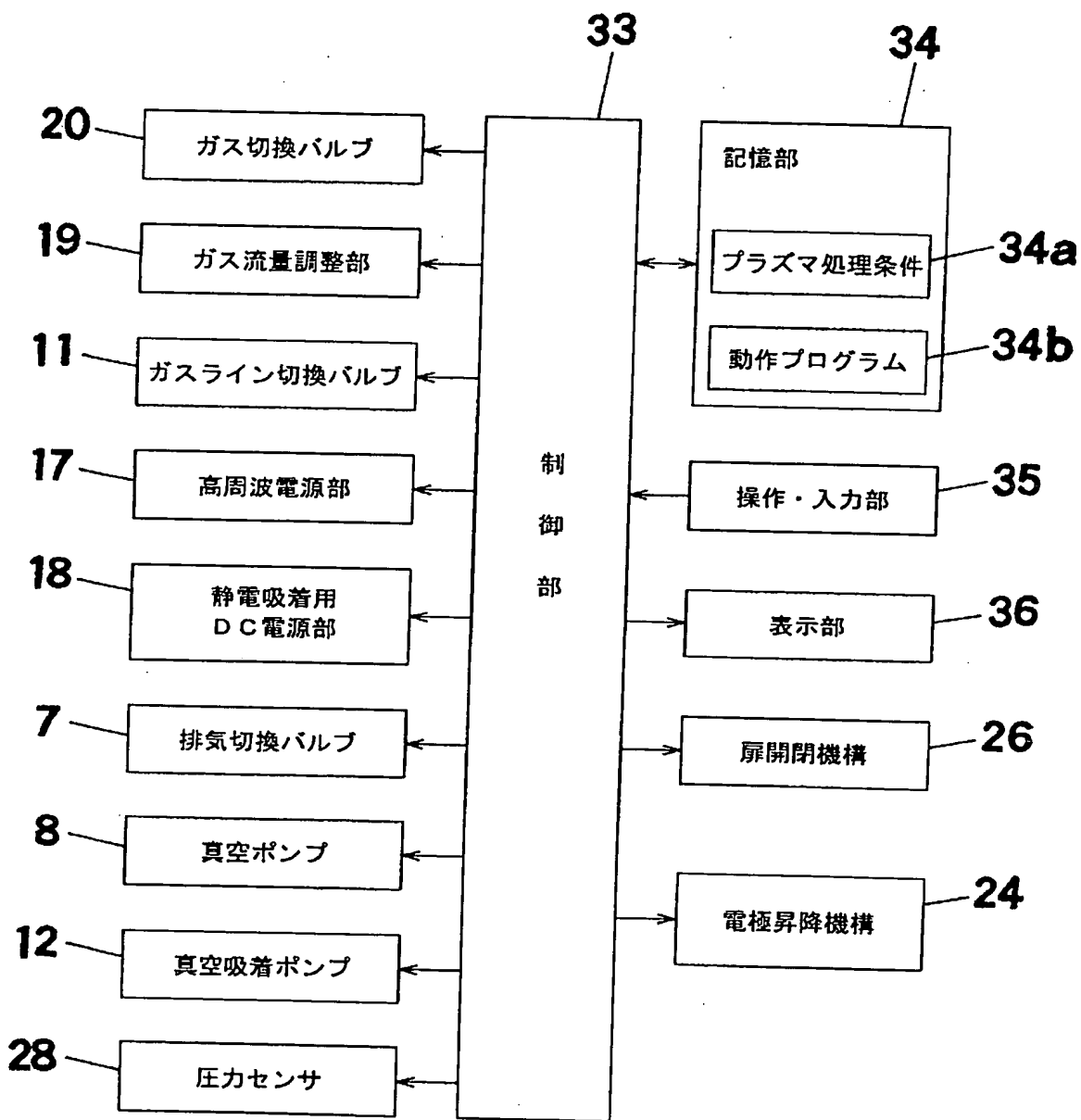


Fig. 3(b)



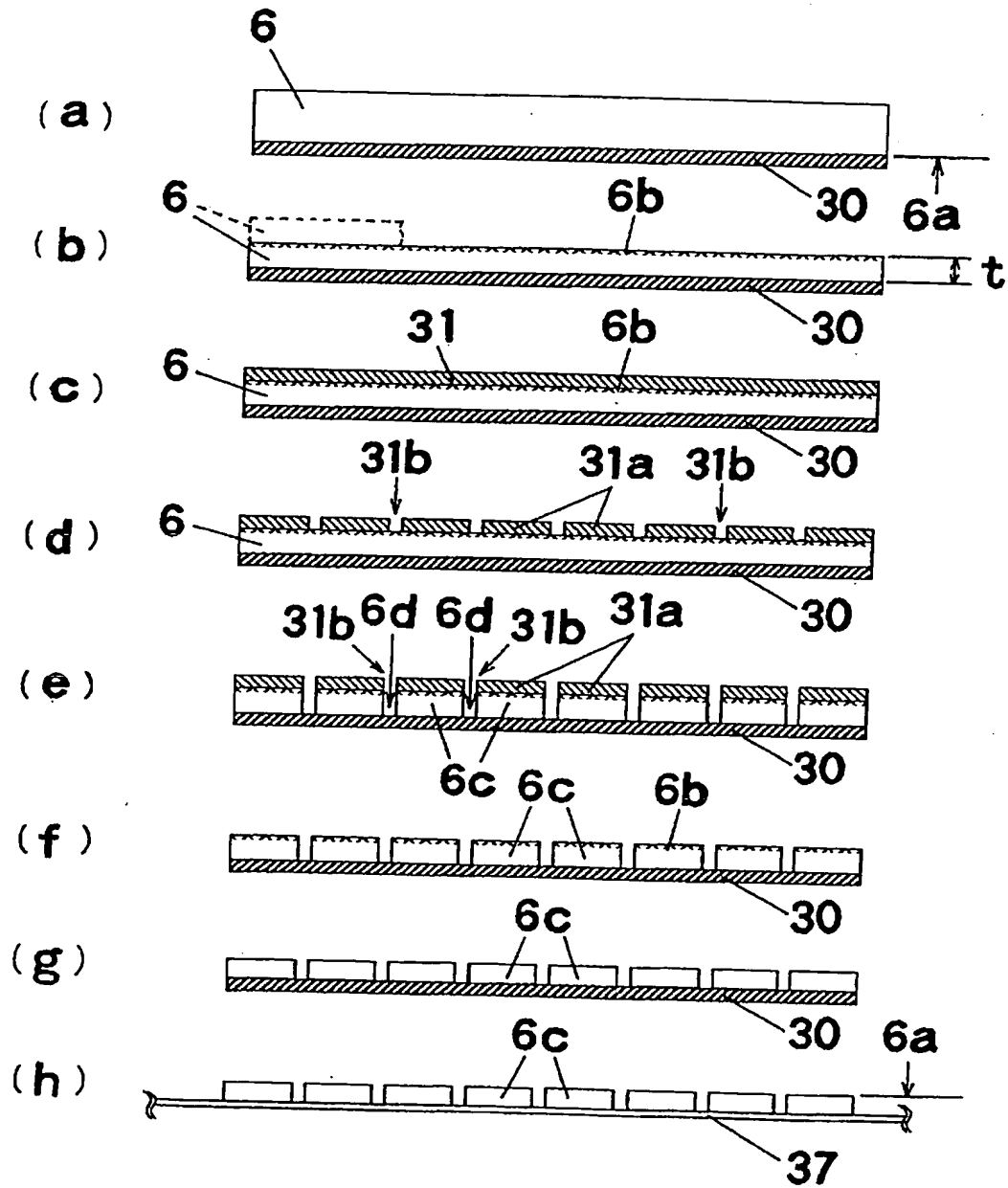
〔図4〕

Fig. 4



【図5】

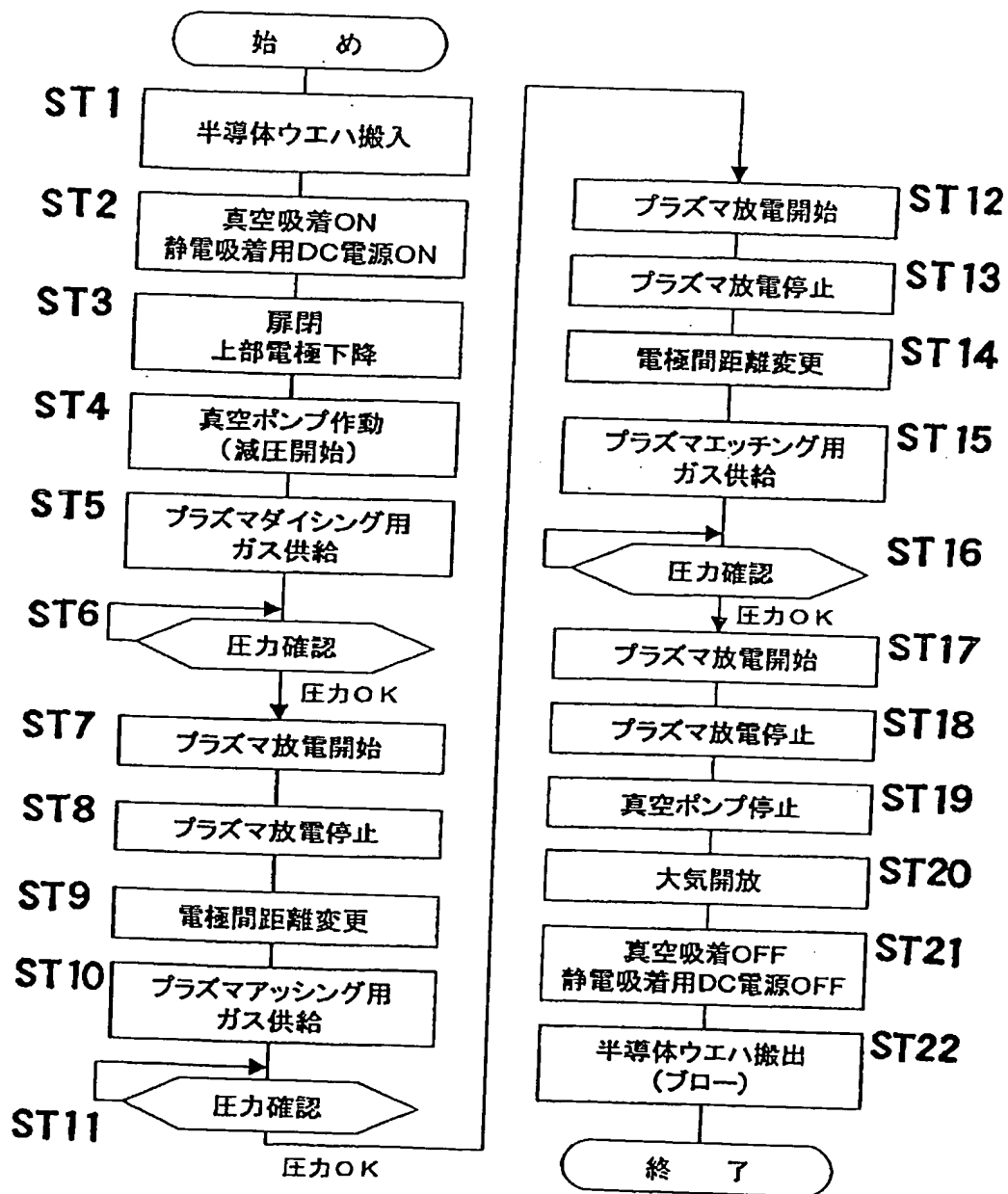
Fig. 5



6a	回路形成面	31	レジスト膜
6c	半導体素子	37	粘着シート

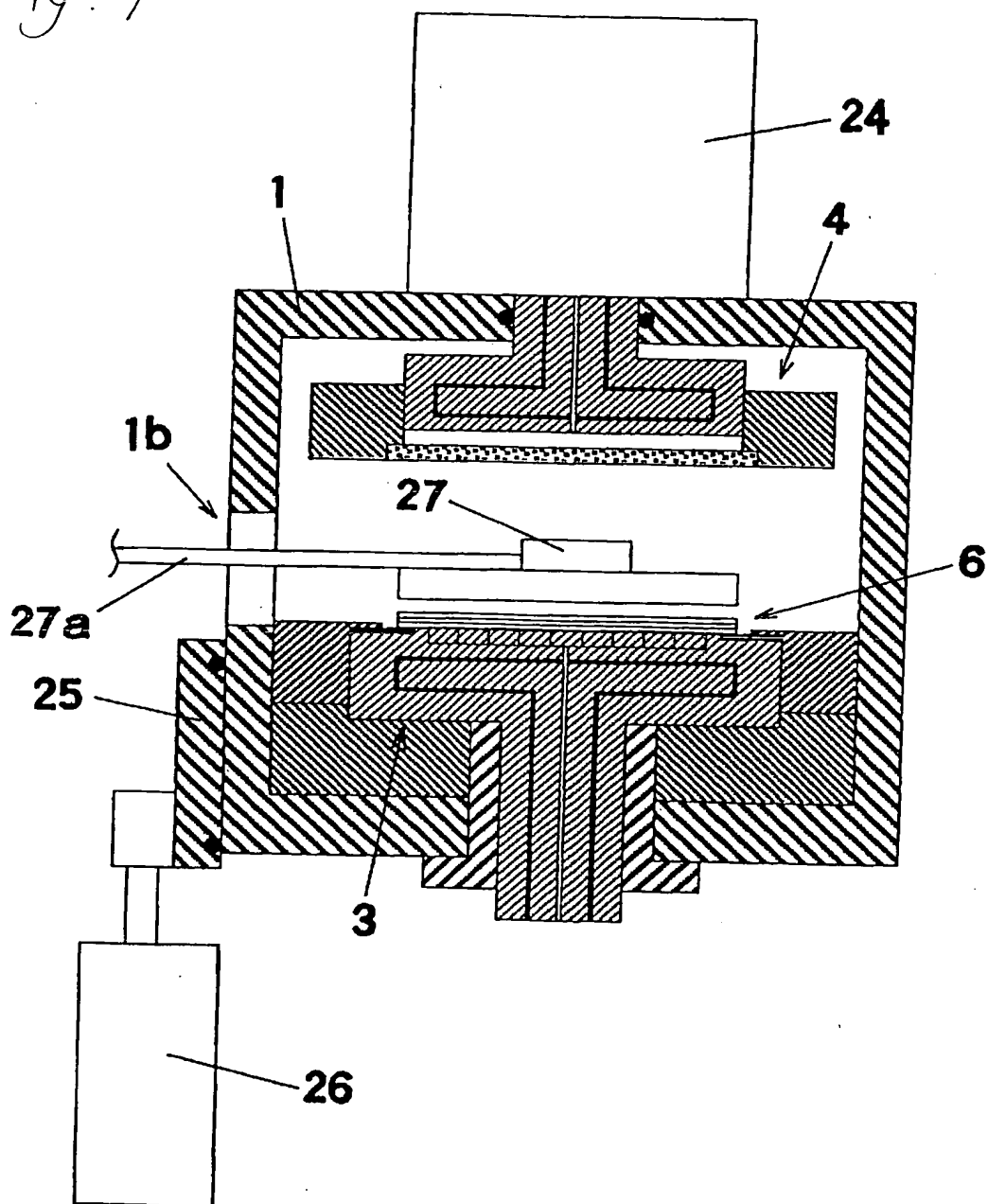
【図6】

Fig. 6



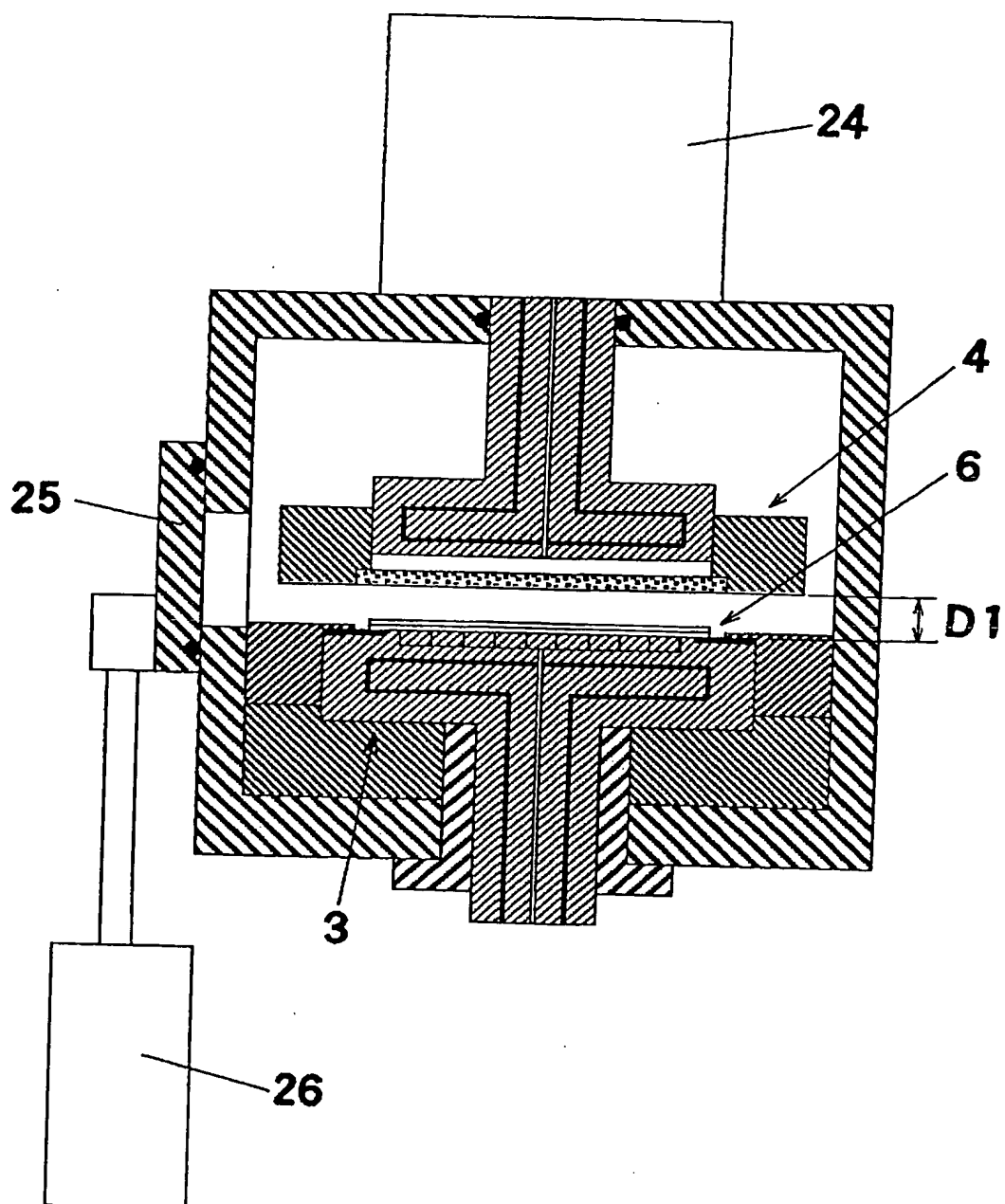
【図7】

Fig. 7



【図8】

Fig. 8



【図9】

Fig. 9

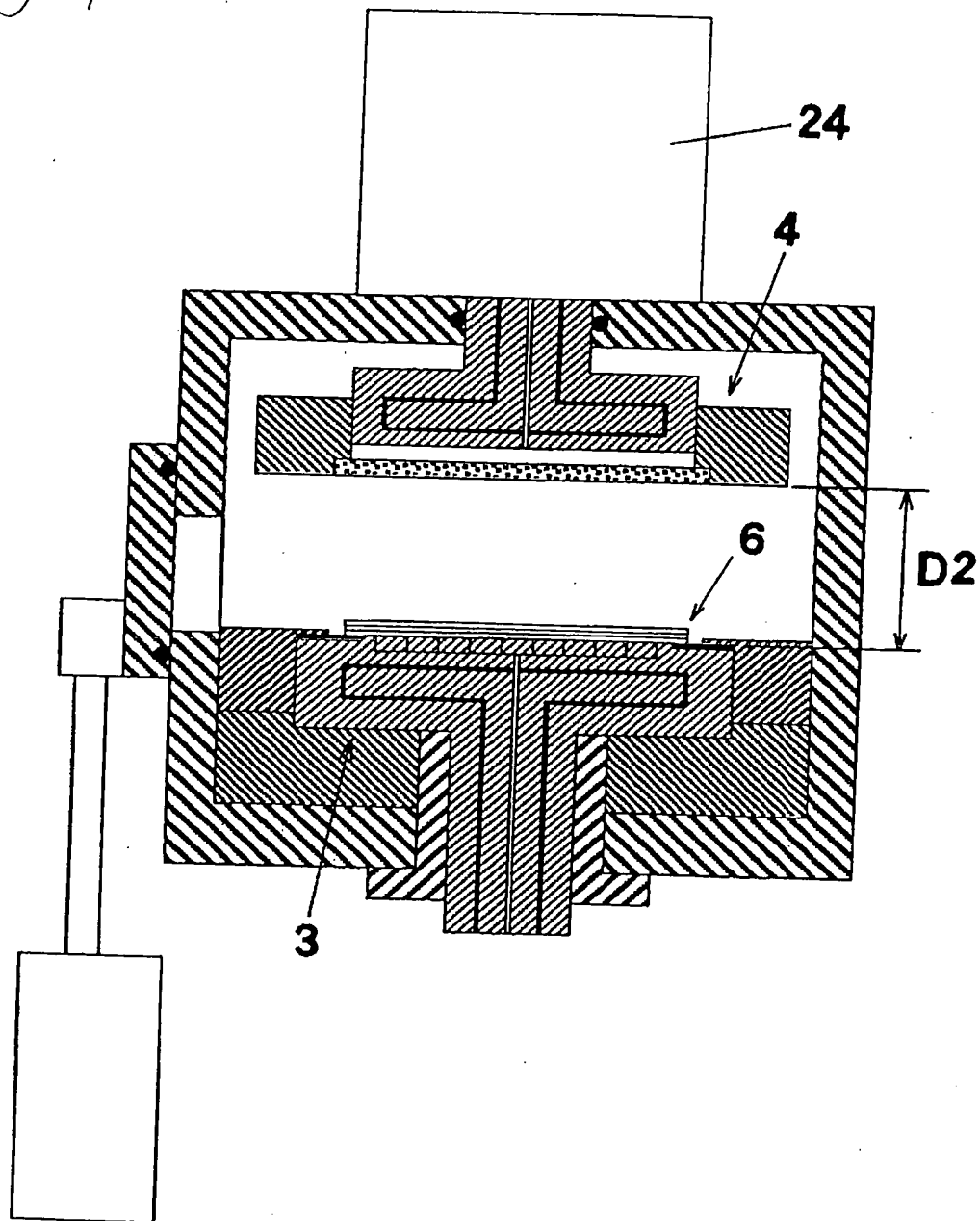


Fig. 10

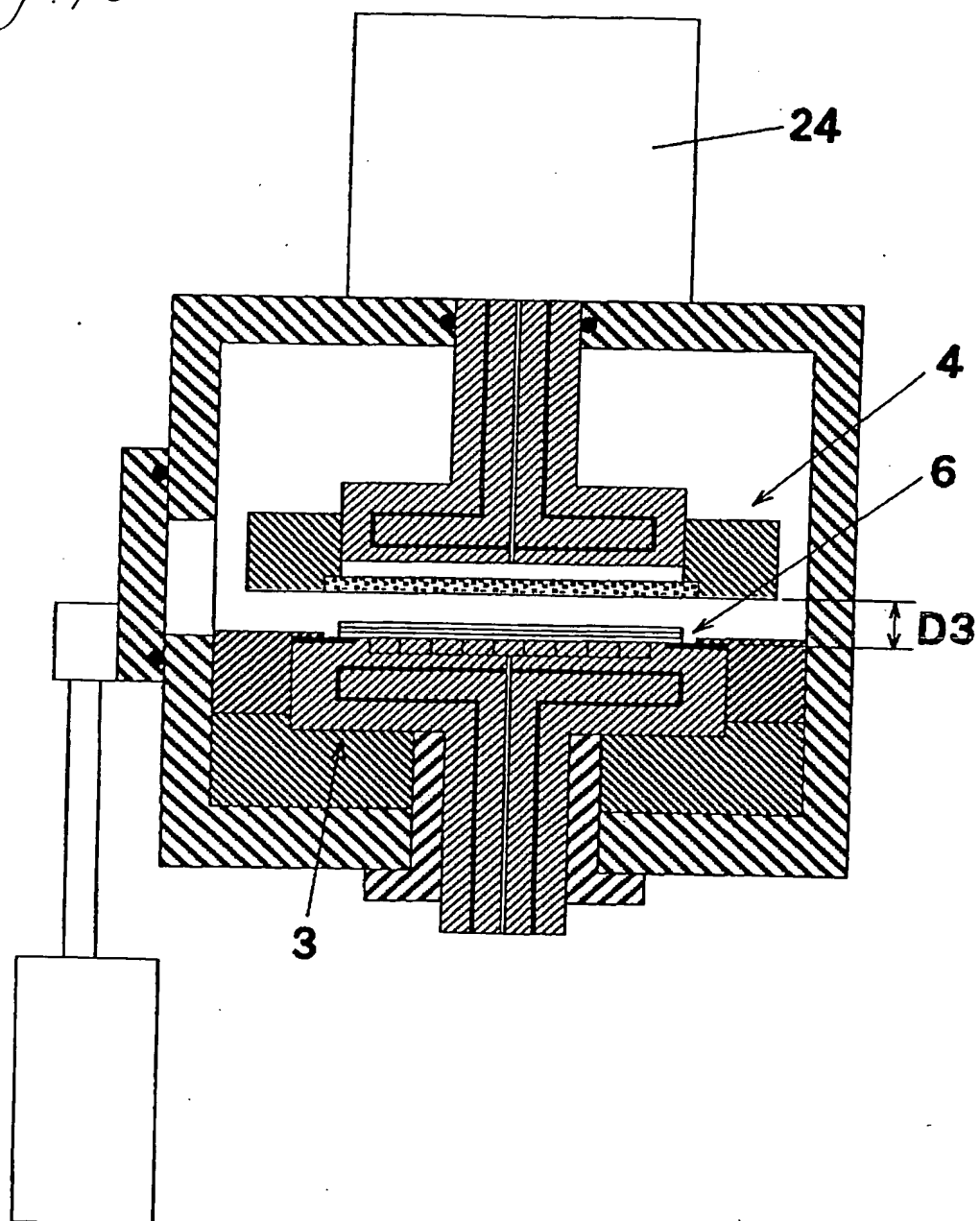


Fig. 11

プロセス	RFパワー (W)	圧力 (Pa)	電極間 距離 (mm)
プラズマ ダイシング ↓	500～ 3000	5～ 300	5～ 50
アッシング ↓	100～ 1000	5～ 100	50～ 100
プラズマ ストレス リリース	500～ 3000	300～ 2000	5～ 20

Fig. 1

- 1 Vacuum chamber
- 2 Processing chamber
- 5 3 Lower electrode
- 4 Upper electrode
- 6 Semiconductor wafer
- 8 Vacuum pump
- 12 Vacuum attracting pump
- 10 17 High frequency electric power supply section
- 18 Electrostatically attracting DC electric power supply section
- 21 First plasma generating gas supply section
- 22 Second plasma generating gas supply section
- 23 Third plasma generating gas supply section

Fig. 2

- 3g Holding face
- 30 Protective sheet
- 20 31a Resist film
- 31b Cutting line

Fig. 4

- 25 7 Exhaust changeover valve
- 8 Vacuum pump
- 11 Gas line changeover valve
- 12 Vacuum attracting pump
- 17 High frequency electric power supply section
- 30 18 Electrostatically attracting DC electric power supply section
- 19 Gas flow rate adjusting section
- 20 Gas changeover valve
- 24 Electrode elevating mechanism
- 26 Door opening and closing mechanism
- 35 28 Pressure sensor
- 33 Control section
- 34 Storage section
- 34a Plasma processing condition
- 34b Operation program

35 Operation and input section

36 Display section

Fig. 5

5

6a Circuit formation face

6c Semiconductor element

31 Resist film

37 Adhesive sheet

10

Fig. 6

a Start

b End

15

ST1 Carry in semiconductor wafer.

ST2 Turn on vacuum attraction.

Turn on electrostatically attracting DC electric power supply.

ST3 Close door.

Lower upper electrode.

20

ST4 Operate vacuum pump.

(Start decompression.)

ST5 Supply gas for plasma dicing.

ST6 Confirm pressure.

Pressure is OK.

25

ST7 Start plasma electric discharge.

ST8 Stop plasma electric discharge.

ST9 Change distance between electrode.

ST10 Supply gas for plasma ashing.

ST11 Confirm pressure.

30

Pressure is OK.

ST12 Start plasma electric discharge.

ST13 Stop plasma electric discharge.

ST14 Change distance between electrode.

ST15 Supply gas for plasma etching.

35

ST16 Confirm pressure.

Pressure is OK.

ST17 Start plasma electric discharge.

ST18 Stop plasma electric discharge.

ST19 Stop vacuum pump.

ST20 Open to atmospheric air.

ST21 Turn off vacuum attraction.

Turn off electrostatically attracting DC electric power supply.

ST22 Carry out semiconductor wafer (Blow).

5

Fig. 11

a Process

b RF power (W)

10 c Pressure (Pa)

d Distance between electrode (mm)

e Plasma dicing

f Ashing

g Plasma stress relief

15